

**Dr. Duke's Phytochemical and Ethnobotanical Databases**  
**Chemicals found in *Agastache rugosa***

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
19	D-LIMONENE	Essential Oil		50000.0	1.1054595196854304	Jim Duke's personal files.
7	ANISALDEHYDE	Essential Oil		30000.0	1.0	Jim Duke's personal files.
12	ESTRAGOLE	Essential Oil		895000.0	0.7812993994251581	Jim Duke's personal files.
57	ROSMARINIC-ACID	Leaf		9000.0	0.19168161442663484	Jim Duke's personal files.
5	DAUCOSTEROL	Root		5.2	-0.5364384912277044	Jim Duke's personal files.
64	OLEANOLIC-ACID	Root		10.0	-0.8643260077603725	Jim Duke's personal files.
36	ANETHOLE	Essential Oil		20000.0	-1.4074654870795833	Jim Duke's personal files.
13	BETA-PINENE	Tissue Culture				Jim Duke's personal files.
0	PARA-CYMENE	Tissue Culture				Jim Duke's personal files.
0	AGASTACHOSIDE	Shoot				Jim Duke's personal files.
0	OCTAN-3-OL	Essential Oil				Jim Duke's personal files.
0	CARYOPHYLLENOL-II	Shoot				Jim Duke's personal files.
12	ESTRAGOLE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	BETA-HUMULENE	Tissue Culture				Jim Duke's personal files.
0	ALPHA-YLANGENE	Tissue Culture				Jim Duke's personal files.
12	ESTRAGOLE	Tissue Culture				Jim Duke's personal files.
0	BETA-BOURBONENE	Shoot				Jim Duke's personal files.
28	ALPHA-PINENE	Essential Oil				Jim Duke's personal files.
0	PARA-CYMENE	Essential Oil				Jim Duke's personal files.
0	AGASTACHIN	Shoot		19.0		Jim Duke's personal files.
0	CARYOPHYLLENOL-I	Shoot				Jim Duke's personal files.
2	ALPHA-HUMULENE	Shoot				Jim Duke's personal files.
0	TILIANINE	Shoot		46.0		Jim Duke's personal files.
0	ESSENTIAL OIL	Plant				Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	ANISALDEHYDE	Shoot				Jim Duke's personal files.
28	ALPHA-PINENE	Tissue Culture				Jim Duke's personal files.
4	COSMOSIIN	Leaf				Jim Duke's personal files.
0	DIHYDROACTINIDIOLIDE	Shoot				Jim Duke's personal files.
0	BETA-CARYOPHYLLENE	Shoot				Jim Duke's personal files.
2	HUMULENE	Essential Oil				Jim Duke's personal files.
0	TILIANIN	Leaf				Jim Duke's personal files.
0	ERYTHRODIOL-3-O-ACETATE	Root				Jim Duke's personal files.
7	ANISALDEHYDE	Tissue Culture				Jim Duke's personal files.
0	3-ALLYL-5-6-DIMETHOXY PHENOL	Shoot				Jim Duke's personal files.
4	COSMOSIIN	Inflorescence				Jim Duke's personal files.
16	ACACETIN	Leaf				Jim Duke's personal files.
8	CARYOPHYLLENE-OXIDE	Shoot				Jim Duke's personal files.
0	HEX-1-EN-3-OL ACETATE	Shoot				Jim Duke's personal files.
0	TILIANIN	Inflorescence				Jim Duke's personal files.
5	BETA-ELEMENE	Tissue Culture				Jim Duke's personal files.
0	OCT-1-EN-3-ONE	Tissue Culture				Jim Duke's personal files.
0	BETA OPLOPENTONE	Shoot				Jim Duke's personal files.
0	4-METHOXY-CINNAMIC ALCOHOL	Shoot				Jim Duke's personal files.
16	ACACETIN	Inflorescence				Jim Duke's personal files.
0	CARYOPHYLLA-4(14)-8(15)-DIEN-5-ALPHA-OL	Shoot				Jim Duke's personal files.
0	(-)-CARYOPHYLLENE	Tissue Culture				Jim Duke's personal files.
2	GERMACRENE-D	Shoot				Jim Duke's personal files.
0	TILIANIN	Root		84.0		Jim Duke's personal files.
5	BETA-ELEMENE	Essential Oil				Jim Duke's personal files.
0	OCT-1-EN-3-OL ACETATE	Shoot				Jim Duke's personal files.

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0	OPLOPANONE	Shoot				Jim Duke's personal files.
0	PARA-METHOXY CINNAMALDEHYDE	Plant				Jim Duke's personal files.
16	ACACETIN	Root		6.8		Jim Duke's personal files.
53	LINALOOL	Tissue Culture				Jim Duke's personal files.
0	BETA-FARNESENE	Tissue Culture				Jim Duke's personal files.
1	TRANS-CARVEOL	Shoot				Jim Duke's personal files.
0	SPATHULENOL	Shoot				Jim Duke's personal files.
0	DIOSMETIN-7-O-BETA-D- GLUCOSIDE	Leaf				Jim Duke's personal files.
36	ANETHOLE	Tissue Culture				Jim Duke's personal files.
0	OCT-1-EN-3-OL	Essential Oil				Jim Duke's personal files.
0	3-O-ACETYL-OLEANOLIC ALDEHYDE	Root		4.4		Jim Duke's personal files.
0	PARA-METHOXY CINNAMALDEHYDE	Tissue Culture				Jim Duke's personal files.
16	ACACETIN	Shoot		285.0		Jim Duke's personal files.
53	LINALOOL	Essential Oil				Jim Duke's personal files.
5	EUGENOL-METHYL-ETHER	Shoot				Jim Duke's personal files.
0	CIS-CARVEOL	Shoot				Jim Duke's personal files.
47	BETA-SITOSTEROL	Root				Jim Duke's personal files.
0	DIOSMETIN-7-O-BETA-D- GLUCOSIDE	Inflorescence				Jim Duke's personal files.
0	DEHYDRO-AGASTOL	Root		6.4		Jim Duke's personal files.
0	3-O-ACETYL-OLEANOLIC ALDEHYDE	Plant				Jim Duke's personal files.
0	PARA-METHOXY CINNAMALDEHYDE	Essential Oil		10000.0		Jim Duke's personal files.
0	ABIETA-4(18)-8-11-13- TETRAEN-7-ONE	Root		26.6		Jim Duke's personal files.
53	LINALOOL	Shoot				Jim Duke's personal files.
5	EUGENOL-METHYL-ETHER	Essential Oil				Jim Duke's personal files.
0	CALAMENE	Tissue Culture				Jim Duke's personal files.
29	SAFROLE	Essential Oil				Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	AGASTANOL	Root		35.5		Jim Duke's personal files.
0	ALPHA-LIMONENE	Tissue Culture				Jim Duke's personal files.
0	4-METHOXYCINNAMALDEHYDE	Shoot				Jim Duke's personal files.
2	PACHYPODOL	Leaf				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
60	LIMONENE	Essential Oil				Jim Duke's personal files.
76	EUGENOL	Shoot				Jim Duke's personal files.
3	ALPHA-CADINOL	Shoot				Jim Duke's personal files.
3	CYNAROSIDE	Leaf				Jim Duke's personal files.
0	ISO-AGASTACHOSIDE	Shoot		210.0		Jim Duke's personal files.
0	TRANS-JASMONE	Shoot				Jim Duke's personal files.
0	OCTAN-3-ONE	Tissue Culture				Jim Duke's personal files.
3	CHAVICOL	Shoot				Jim Duke's personal files.
2	P-METHOXYCINNAMALDEHYDE	Shoot				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
31	CARYOPHYLLENE	Essential Oil				Jim Duke's personal files.
12	ESTRAGOLE	Shoot				Jim Duke's personal files.
0	GAMMA-CADINENE	Tissue Culture				Jim Duke's personal files.
13	BETA-PINENE	Essential Oil				Jim Duke's personal files.
3	CYNAROSIDE	Inflorescence				Jim Duke's personal files.
0	AGASTACHOSIDE	Root		9.2		Jim Duke's personal files.
0	CIS-JASMONE	Shoot				Jim Duke's personal files.
0	OCTAN-3-OL	Tissue Culture				Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	CHAVIBETOL	Shoot				Jim Duke's personal files.
11	P-ANISALDEHYDE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
6	MASLINIC-ACID	Root		12.4		Jim Duke's personal files.
9	DELTA-CADINENE	Essential Oil				Jim Duke's personal files.